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ABSTRACT

The Neighborhood Youth Corps Out-of-School Program in 27 Oregon counties was studied (1) to assess the effectiveness of the program in aiding enrollees (school dropouts aged 16-21) to obtain productive jobs and/or to continue their education and (2) to identify socioeconomic and educational factors associated with success or failure in the program. Of 942 previous enrollees, data from 302 were subjected to stepwise multiple linear regression and classification analyses. The most important findings were that a higher proportion of females succeeded than did males and that neither intelligence quotient nor scholastic achievement was a predictor of success or failure of enrollees. Accurate prediction was not possible for male enrollees or married or divorced females. An equation was developed for predicting success or failure of single female enrollees using 5 variables: language spoken in home, living group, reason for leaving school, welfare status, and lifetime occupational goal. (JH)

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ANALYSIS OF SELECTED FACTORS RELATING TO THE NEIGHBORHOOD YOUTH CORPS OUT OF SCHOOL PROGRAM IN RURAL COUNTIES OF OREGON

by

Robert A. Bigsby and Harry E. Clark

During the early 1960's, attention focused on the plight of underprivileged persons in the United States. Considerable money and effort have been expended during the past decade in attempts to alleviate unemployment and poverty. Programs designed to provide educational and occupational opportunities for disadvantaged persons have been implemented on a wide scale. These programs have been designed to provide a variety of services to persons who in some identifiable way have dropped from the mainstream of American life.

The Neighborhood Youth Corps Out-of-School program is one of the programs implemented to aid young persons. This program was established by the Economic Opportunity Act of 1963 and is administered by the Manpower Administration, U.S. Department of Labor. At the time this research was conducted, the program was designed to aid unemployed school dropouts age 16 through 21. Aid was in the form of paid employment, counseling, and opportunity to continue education. Employment was with a non-profit corporation or public agency and was in the public interest. In rural Oregon, the agency responsible for the Out-of-School program was Oregon State University, Cooperative Extension Service. At the time of this research and writing, the Cooperative Extension Service was sponsoring the program in 27 of Oregon's counties.

The research reported here was undertaken for two primary reasons. The first was to assess the overall effectiveness of the program in aiding enrollees to obtain productive jobs and/or continue their education. This overall assessment was to aid in providing general direction to the program in terms of its past record. The second reason for the study was an attempt to identify selected socio-economic and educational factors in enrollees'

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backgrounds associated with either success or failure in the program. By identifying success and failure oriented factors, future enrollee's potential for success or failure could be assessed. In cases where probable failure was indicated, appropriate steps could be taken to enhance the chances of success.

Population and Sample

Data were available for 942 persons who had been enrolled in, and terminated from, the Out-of-School program in rural Oregon during one agreement period between the Bureau of Work Training Programs and the Cooperative Extension Service, Oregon State University (August 11, 1966 to July 28, 1968). A table of random digits was employed to draw a sample of enrollee folders from the total files available. Three hundred and two of the folders drawn contained usable information.

Factors Employed in Analysis

It was the intent, throughout this investigation, to utilize information normally available to Neighborhood Youth Corps personnel. By using this information, any significant results obtained would be of direct practical value to those working with young people in similar situations. The factors chosen for inclusion in this study were an outgrowth of a search of literature pertaining to school persistence, work training and retraining programs, disadvantaged youth and adults, general psycho-sociological information, and success-failure prediction. Twenty factors were selected for inclusion in this study. Success-failure in the program was included as a twenty-first factor and became the dependent variable in subsequent analyses.

Data were coded in such a way that each portion of the 21 factors was capable of entering analysis as an independent variable. In this way 43 variables were identified as follows:

CODED VARIABLES EMPLOYED IN STEPWISE
MULTIPLE LINEAR REGRESSION ANALYSES

Sex-
- Male
- Female

Age

Language spoken in home-
- English
- Spanish
- Other

Marital status-
- Single
- Married
- Divorced

Living group-
- Living with both parents
- Living with guardian
- Living alone
- Living with father only
- Living with mother only
- Living with grandparents

Parental occupation-
- Parent disabled or retired
- Parent unskilled
- Parent semi-skilled
- Parent skilled
- No parental occupation stated

Head of household employment status-
- Not working
- Working part time
- Working full time

Family income per member

Highest school grade completed

Reason for leaving school-
- Academic reasons
- Marriage
- Graduation
- Economic reasons
- Unstated reasons
- Discipline
- Health

Cash welfare payments to the home-
- Yes
- No

Number of siblings in the family

Previous work experience of 30 days or more-
- Yes
- No

Stated lifetime occupational goal-
- No stated lifetime goal
- Unskilled goal
- Semi-skilled goal
- Skilled goal
- Professional goal

Number of times enrolled in the program

Geographical area of program-
- Eastern area
- Valley area
- Coastal area

Number of enrollee's own children

Counseling received in the program-
- Yes
- No

Reported intelligence quotient

Reported scholastic record

Degree of success in the program-
- Failure
- Moderate Success
- Success

Procedures

Data for individual enrollees were obtained from two sources. Socio-economic data were taken directly from application forms contained in enrollees' personal files. Educational data were obtained from the last school attended by enrollees.

Data were coded and placed on punch-cards for computer analyses. The principal analysis task was to identify the socio-economic and/or educational variables most closely associated with success or failure, in the program. Both stepwise multiple linear regression and classification analyses were employed in analyzing the data. Because of observed differences between groups according to sex, marital status, and age in a pilot group (N=63) the regression analyses were carried out utilizing data according to groupings by marital status, age, and sex.

Findings

The findings of this study are presented in two parts, each representing one of the primary objectives. The first task was to assess the effectiveness

of the program for various enrollees. Tables 1, 2, and 3 provide a summary of the major aspect of this assessment.

Effectiveness of the Program for Various Enrollees

Table one summarizes the success-failure distribution by sex. Note from this table that almost twice as many males (58.7%) as females (29.6%) were judged to be failures.

Table two illustrates the success-failure distribution of enrollees by language spoken in the home. Notwithstanding the relatively small numbers of enrollees from Spanish-speaking homes, note from this table that female enrollees from homes in which Spanish was spoken succeeded at a much higher rate than their counterparts coming from non Spanish-speaking homes.

Table three provides the distribution of success-failure by enrollee age. Note from this table that both 16 year-old males and 16 year-old femals had a considerably lower success rate than older enrollees.

Table 1. SUMMARY OF SUCCESS-FAILURE OF ENROLLEES IN THE OUT-OF-SCHOOL PROGRAM BY SEX (N=302)

Sex	Failure	Moderate Success	Success	Total
Males	94 58.7%	23 14.4%	43 26.9%	160 100.0%
Females	42 29.6%	36 25.3%	64 45.1%	142 100.0%

Table 2. SUMMARY OF SUCCESS-FAILURE OF ENROLLEES IN THE OUT-OF-SCHOOL PROGRAM BY LANGUAGE SPOKEN IN THE HOME FOR MALES AND FEMALES

Language Spoken In Home	Failure	Moderate Success	Success	Total
		Males (N=160)		
English	92 61.8%	19 12.8%	38 25.4%	149 100.0%
Spanish	3 33.3%	2 22.2%	4 44.5%	9 100.0%
Other	1 50.0%	- - - - - -	1 50.0%	2 100.0%
		Females (N=142)		
English	42 33.6%	32 25.5%	51 40.8%	125 100.0%
Spanish	1 5.9%	4 23.5%	12 70.5%	17 100.0%
Other	- - - - - -	- - - - - -	- - - - - -	- - - - - -

Table 3. SUMMARY OF SUCCESS-FAILURE OF ENROLLEES IN THE OUT-OF-SCHOOL PROGRAM BY AGE FOR MALES AND FEMALES

Age	Failure	Moderate Success	Success	Total
		Males (N=160)		
16	26 68.4%	9 23.7%	3 7.9%	38 100.0%
17	31 59.6%	5 9.6%	16 30.8%	52 100.0%
18	19 55.9%	2 5.9%	13 38.2%	34 100.0%
19	14 63.7%	1 4.5%	7 31.8%	22 100.0%
20	4 33.3%	4 33.3%	4 33.3%	12 100.0%
21	2 100.0%	- - - - - -	- - - - - -	2 100.0%
		Females (N=142)		
16	11 55.0%	3 15.0%	6 30.0%	20 100.0%
17	10 38.5%	4 15.4%	12 46.1%	26 100.0%
18	9 25.0%	11 30.6%	16 44.4%	36 100.0%
19	8 25.8%	9 29.0%	14 45.2%	31 100.0%
20	2 9.5%	6 28.5%	13 62.0%	21 100.0%
21	3 37.5%	3 37.5%	2 25.0%	8 100.0%

IDENTIFICATION OF SOCIO-ECONOMIC FACTORS

The results of the second major objective of the study; namely, the identification of socio-economic factors in enrollee's backgrounds associated with success or failure in the program, are outlined below. The identification of important socio-economic factors was through linear regression and classification analyses.

Classification Analysis

A classification analysis was performed employing quantitative data. The quantitative variables of age, highest grade completed, intelligence quotient and scholastic record were employed for this analysis. The independent variable, success,was defined in terms of failure, moderate success, and success.

The results of the classification analysis were not conclusive. It was not possible to accurately classify enrollees according to these three success categories by employing the four quantitative variables noted above.

Regression Analysis

All remaining variables were qualitative and were analyzed utilizing a stepwise multiple linear regression program. Several successive analyses were performed in attempts to isolate the variables most closely associated with either success or failure for the several groups of enrollees represented in the study. The major groupings employed in these analyses were marital status, sex, and age.

The index of multiple correlation between independent variables and the dependent variable, success, employed in the regression analyses was the R-square coefficient. As the value of the R-square coefficient approaches one, the relationship between the independent variables and the dependent variable, success, grows stronger. As the R-square value approaches zero, the relationship weakens.

Analyses for males

An initial regression analysis was performed utilizing data for all males. The multiple correlation coefficient (R-squared) value obtained in this analysis was very low (.142 with 20 of the 43 variables entered). Because of this low R-squared value, a second regression analysis was performed utilizing data for single males only.

Table four provides a summary of the variables entering the analysis for single males. This table shows only those variables entering the analysis with student's t scores above the 75 percent level. Note from this table that the R-squared value for single males, like that for all males, was low (.184).

Table 4. SUMMARY OF TEN VARIABLES ENTERING STEPWISE MULTIPLE LINEAR REGRESSION ANALYSIS FOR SINGLE MALES WITH STUDENT'S t VALUES ABOVE THE 75 PERCENT CONFIDENCE LEVEL.
R-SQUARE COEFFICIENT WITH TEN VARIABLES ENTERED= .184
DEGREE OF FREEDOM= 136

Variable	Rank order entering analysis	Coefficient	Student's t value with 10 variables entered
Enrollee age	2	.1218	1.86*
English spoken in home	4	-.4186	-2.29*
Head of household working part time	9	.2275	-1.56
Head of household working full time	6	-.2643	-2.19*
Family income per member	10	.0316	1.41
Highest grade completed	5	.0705	1.35
Number of children in family	1	.0652	2.66**
Enrollee stating no lifetime occupational goal	8	-.1916	-1.84*
Enrollee stating semi-skilled occupational goal	7	.2847	2.37*
Eastern region	3	.2319	-1.82*

* Significant at .10 level
** Significant at .01 level

Analyses for females

The linear regression analyses for female enrollees followed a pattern similar to that of male enrollees. As in the case of male enrollees, the initial analysis of data for females was performed utilizing data for all females and all variables. A relatively high R-squared coefficient of .316 was obtained in this analysis, indicating that specific factors were associated with success and failure in the program.

A second regression analysis was performed utilizing data for single females only in an attempt to obtain an increased R-squared value, and a higher degree of predictability. Table five summarizes the variables entering this analysis with Student's t values above the .1 confidence level.

Table 5. SUMMARY OF FIVE VARIABLES ENTERING STEPWISE MULTIPLE LINEAR REGRESSION ANALYSIS FOR SINGLE FEMALES WITH STUDENT'S t VALUES ABOVE THE 90 PERCENT LEVEL OF CONFIDENCE.
R-SQUARE COEFFICIENT WITH FIVE VARIABLES ENTERED= .435
DEGREE OF FREEDOM= 72

Variable	Rank order entering analysis	Coefficient	Student's t value at step five
English spoken in home	4	-.3300	-3.09*
Living with mother only	2	-.3284	-3.26*
Left school for disciplinary reasons	3	-.3297	-3.42*
Enrollee's family receives welfare	5	-.2172	-2.71*
Enrollee stating no lifetime occupational goal	1	-.3397	-3.17*

*Significant at the .01 level

Note from this table that the R-squared value increased (.435) when data for single females only were considered. Contrast this value with that obtained from data for all females (.316). Note also, that only five factors contributed significantly to the analysis.

Additional regression analyses were performed utilizing data for females. Analyses for single, married, and divorced females grouped in various combinations

provided generally low multiple correlation scores. The highest R-squared correlations obtained for these groups were obtained for married females (.312), single and divorced females together (.339), and married and divorced females together (.347).

Prediction of success-failure

One of the primary reasons for performing the regression analyses was to isolate factors associated with success and failure. By isolating these factors, future enrollees' potential for success in the program could be estimated. Enrollees indicating a likelihood of failure could receive a program modified to provide optimal chances of success. Prediction of failure or success was based upon the factors identified in the successive regression analyses.

Prediction of success or failure was performed twice for each of the groups: male, single female, and married or divorced female. The first prediction was based upon the population sample identified for the study. The second prediction was based upon a new sample drawn from the population to validate the prediction.

In all cases, predictions were based upon only those factors entering the regression analyses and contributing significantly to increasing the R-squared coefficient.

The accuracy of prediction for male enrollees was not high for either those in the main sample or those in the validation sample. Tables six and seven summarize the accuracy of prediction for these two groups. Note from these two tables that the accuracy of prediction for successful single males was too low to be of practical value (15.8 percent and 44.5 percent). However, note also that few males who were failures were incorrectly classified as potential successes (10.1 percent and 3.4 percent).

Table 6. SUMMARY OF PREDICTION ACCURACY FOR SINGLE MALE ENROLLEES ACCORDING TO SUCCESS AND FAILURE CLASSIFICATIONS ONLY EMPLOYING THE FOUR VARIABLES FROM TABLE 4 HAVING THE HIGHEST STUDENT'S t VALUES.

	Failures*	Success*
Predicted placement	80**	6**
Actual	88	38
Percent accuracy of prediction	89.9%	15.8%

*Failure= 1, Success= 3. Predicted classification from one to two classified failure, two and above classed success.
**Placement considered accurate if deviation less than 1.

Table 7. SUMMARY OF PREDICTION ACCURACY FOR NEW SAMPLE OF SINGLE MALE ENROLLEES ACCORDING TO SUCCESS AND FAILURE CLASSIFICATION EMPLOYING FOUR VARIABLES.

	Failure*	Success*
Predicted placement	28**	5***
Actual placement	29	11
Percent accuracy of prediction	96.6%	44.5%

*Failure=1, Success= 3
**Predicted classification from one to two classed failure.
***Predicted classification of two and above classed success.

Success-failure prediction for married or divorced females was, like that for males, not accurate. Table eight summarizes the accuracy with which correct predictions were made for the total sample of married and divorced females. Table nine summarizes the accuracy with which correct predictions for this group were made in the validation sample. Although prediction for this group of enrollees was more accurate than prediction for male enrollees, it was still low. Note that in the validation sample, failure was predicted accurately 75 percent of the time, but success only 50 percent of the time.

Table 8. SUMMARY OF PREDICTION ACCURACY FOR MARRIED AND DIVORCED FEMALE ENROLLEES ACCORDING TO SUCCESS AND FAILURE CLASSIFICATION ONLY EMPLOYING THREE VARIABLES.

	Failure*	Success*
Predicted placement	11**	26***
Actual placement	19	29
Percent accuracy of prediction	58.9	89.7%

*Failure= 1, Success= 3
**Predicted classification of one to two classed failure.
***Predicted classification of two and above classed success.

Table 9. SUMMARY OF PREDICTION ACCURACY FOR NEW SAMPLE OF MARRIED AND DIVORCED FEMALE ENROLLEES ACCORDING TO SUCCESS AND FAILURE CLASSIFICATION EMPLOYING THREE VARIABLES.

	Failure*	Success*
Predicted placement	6**	4***
Actual placement	8	8
Percent accuracy of prediction	75.0%	50.0%

*Failure= 1, Success= 2
**Predicted classification from one to two classed failure.
***Predicted classification of two and above classed success.

The accuracy of success-failure prediction for single females was considerably higher than for any other group in the study. Tables ten and eleven provide a summary of prediction accuracy for this group. Note from these tables that prediction of both failure and success were high. In addition, note that the accuracy of prediction remained high in the validation sample drawn (Table 11).

Table 10. SUMMARY OF PREDICTION ACCURACY FOR SINGLE FEMALE ENROLLEES ACCORDING TO SUCCESS AND FAILURE CLASSIFICATION ONLY EMPLOYING FIVE VARIABLES FROM TABLE 5.

	Failure*	Success*
Predicted placement	18**	31***
Actual placement	24	34
Percent accuracy of prediction	75.0%	91.2%

*Failure= 1, Success= 3
**Predicted classification of one to two classed failure.
***Predicted classification of two and above classed success.

Table 11. SUMMARY OF PREDICTION ACCURACY FOR NEW SAMPLE OF SINGLE FEMALE ENROLLEES ACCORDING TO SUCCESS AND FAILURE CLASSIFICATION EMPLOYING FIVE VARIABLES.

	Failure*	Success*
Predicted placement	15**	4***
Actual placement	16	5
Percent accuracy of prediction	93.7%	80.0%

*Failure= 1, Success= 3
**Predicted classification from one to two classed failure.
***Predicted classification of two and above classed failure.

SUMMARY OF FINDINGS

General Findings

The two most important general factors brought out by this study were:

1. A higher proportion of females succeeded in the out-of-school program than did males. Forty-five and one-tenth percent of the females succeeded compared to 26.9 percent of the males.

2. Based upon the limited information available, neither intelligence quotient nor scholastic achievement were predictors of success or failure of enrollees in the program. However, both those with higher intelligence quotients and higher scholastic records had better success rates.

Factors Influencing Success and Failure of Male Enrollees

Of the 43 variables investigated in this study the following were important in the success or failure of male enrollees:

1. Enrollee age. Sixteen-year-old male enrollees failed in the program at a rate approximately four times that of older enrollees.

2. Number of siblings in enrollee's family. Male enrollees coming from families with four or more children succeeded at a higher rate than enrollees from families with one, two, or three children. "Only children" failed at a substantially higher rate than others.

3. Geographical area. Male enrollees from the coastal area of the state succeeded at a higher rate than those from either the valley or eastern areas.

4. Highest grade completed. There was a steady decrease in the failure rate of male enrollees as school grade completed increased.

5. Head of household employment. Single male enrollees living in homes in which the head of household worked part time succeeded over twice the rate of those living in homes with the head of household working full time. This group also succeeded at a higher rate than those from homes in which the head of household was not working at all.

Factors Influencing Success and Failure of Female Enrollees

Of the 43 variables investigated in this study the following were important in the success or failure of female enrollees:

1. Language spoken in the home. Enrollees speaking Spanish in the home succeeded at a substantially higher rate than those speaking English.

2. Social assistance. Female enrollees whose families accepted cash welfare payments succeeded at a lower rate than those whose families did not accept welfare.

3. Stated lifetime occupational goal. Female enrollees stating a skilled lifetime goal succeeded at a higher rate than those stating other lifetime goals. Those stating no lifetime goal or a professional goal failed at a substantially higher rate than others.

4. Family living group. Single female enrollees living with their mothers only succeeded at less than one-half the rate of those living with both parents.

5. Reason for leaving school. Female enrollees who left school for disciplinary reasons failed at a very high rate.

6. Enrollee age. Sixteen-year-old female enrollees tended not to succeed at as high a rate as 17, 18, 19, and 20-year olds.

Prediction of Success and Failure

1. Accurate prediction of both success and failure was not possible for male enrollees or married or divorced females.

2. It was possible to correctly predict success and failure in the program of single female enrollees approximately 75 percent of the time by employing five socio-economic factors.

3. An equation was developed for predicting success and failure of single female enrollees. The following variables were employed in this prediction: (a) language spoken in home, (b) living group, (c) reason for leaving school, (d) welfare, (e) lifetime occupational goal.